

SPECIFICATION

Electronic Version 1.2.8

Stylesheet Version 1.0

METHODS OF PRODUCING TABLETED GUMS AND TABLETED GUMS SO PRODUCED

Background of the Invention

[0001] The present invention generally relates to gums. More specifically, the present invention relates to methods of producing tableted gums and tableted gums so produced.

[0002] A variety of different gums, such as chewing gums, bubble gums and products thereof, have been developed over the years to improve and enhance the quality of such products. Typically known and available gums include a variety of different shapes, sizes and colors. For example, it is generally known that individual pieces of gum can be formed into chunks, chips, sticks, tapes, shredded pieces, tabs, pellets or the like. Each of these known forms can themselves include a variety of different shapes and sizes.

[0003] With respect to gums that are formed into tablets (i.e., tableted gums), these types of gums, for example, can be made by mixing gum with a tableting powder. The mixture of gum and tableting powder is then further processed to form the tableted gum, such as commercially available tableted gums sold under the names "RAZZLES" and "BLOX".

[0004] In addition to gum products, a variety of other consumer products are generally known and available in a tableted form. For example, tableting is widely utilized in pharmaceuticals and confections to manufacture a variety of different tableted products. In general, the tableting process of such products is similar to

that of other tableting processes such as those relating to tableted gums. For example, a tableted pharmaceutical product, in general, is made by processing a mixture of a pharmaceutical agent and a pharmaceutically acceptable tableting powder in a known way.

[0005] In general, a common feature of known tableted products and processes thereof is that the mixture of the product component and tableting media is homogeneous to the extent that the size and shape of the product component and the tableting media are uniformly similar. Typically, the tableting media is in the form of a powder which is composed of a number of finely sized particles.

[0006] In this regard, the product component, such as a pharmaceutical agent or a gum agent, is generally processed prior to mixing with the tableting media such that the product component has a similar shape and size characteristic as that of the tableting media unless, of course, the product component was manufactured in such form. For example, the product component is typically ground into a powder form similar in size characteristic to the tableting powder.

[0007] One of the reasons that a homogeneous mixture of product and tableting media is preferred is that the resulting tableted product, in general, has a homogeneous make up similar to that of the pre-processed mixture. In this regard, the product component can be evenly dispersed throughout the tableted product.

[0008] However, the homogeneous mixture, particularly a powder mixture of finely sized particles, can cause the tableted product to stick or adhere to surfaces of the tableting manufacturing equipment as the tableted product is processed unless additional measures are taken to minimize the sticking properties of the powder mixture. For example, specialized equipment has been developed and utilized for processing known tableted gums to address this issue. With increased sticking properties, the tableting mixture can make it more difficult to efficiently remove the end product (i.e., the tableted product) from the process equipment. It thus can create difficulties with processing the tableted gum, cleanup of the process equipment after use and the like.

[0009] It is believed that the increased sticking is due to the small-sized particles of typical tableting mixtures, such as powder-sized particles. With smaller-sized particles, typical tableting mixtures, thus, have a high surface area which can enhance the sticking or adhering properties of the tableting mixture.

[0010] A need, therefore, exists to provide tableted gums that can be easily and readily manufactured and that can increase the level of enjoyment and excitement that one gains from chewing or blowing same.

Summary of the Invention

[0011] The present invention provides tableted gums, such as tableted bubble gum and chewing gum. The tableted gum of the present invention includes a gum component in the form of gum chips and a tableting media. The gum chips are generally larger in size than the particles of the tableting media, such as those of a tableting powder. In this regard, less force or pressure is required to process the mixture of gum chips and tableting media into a tableted gum as compared to, for example, the processing of a homogeneous tableting mixture of gum and tableting powder. Further, the larger sized gum chips tend to concentrate in a top portion of the tableted gum such that the resultant tableted gum displays the non-homogeneous characteristics of the gum chip and tableting media mixture.

[0012] To this end, in an embodiment of the present invention, a tableted gum is provided. The tableted gum includes a tableting media and a gum component including one or more gum chips.

[0013] In an embodiment, the tableting media comprises a tableting powder composed of particles that are smaller in size than the gum chips of the gum component.

[0014] In an embodiment, the gum component comprises about 40% to about 60% by weight of the tableted gum and the tableting media comprises about 40% to about 60% by weight of the tableted gum.

[0015] In an embodiment, the tableted gum comprises a top portion which contains a

substantial amount of the gum chips of the gum component.

[0016] In an embodiment, the gum component is differently colored than the tableting media.

[0017] In an embodiment, the tableted gum further includes a food grade lubricant to facilitate forming the tableted gum.

[0018] In another embodiment, a gum including a mixture of gum chips and tableting media in a tableted form is provided wherein the gum chips have an average particle size greater than an average particle size of the tableting media.

[0019] In an embodiment, the average particle size of the gum chips ranges from about 0.5 mm to about 6.0 mm.

[0020] In still yet another embodiment, a method of producing a tableted gum is provided. The method includes the steps of providing a gum component; processing the gum component to form one or more gum chips; mixing the gum chips with a tableting media; and processing the mixture of gum chips and tableting media to form the tableted gum.

[0021] In an embodiment, the gum component is chilled prior to forming the gum chips.

[0022] In an embodiment, the mixture of gum chips and tableting media is punched or pressed to form the tableted gum.

[0023] It is, therefore, an advantage of the present invention to provide a tableted gum and method of producing same.

[0024] Another advantage of the present invention is to provide a tableted gum that includes a mixture of gum chips and a tableting media, such as a tableting powder.

[0025] A further advantage of the present invention is to provide a process for manufacturing a tableted gum that can readily process a mixture of gum chips and tableting media to form the tableted gum.

[0026] A still further advantage of the present invention is to provide a tableted gum that includes a non-homogeneous mixture of gum chips and tableting media due to the larger sized gum chips as compared to the particles of the tableting media.

[0027] Yet a still further advantage of the present invention is to provide a gum that creates increased levels of enjoyment and excitement during use.

[0028] Additional features and advantages of the present invention are described in, and will be apparent in, the detailed description of the presently preferred embodiments.

Detailed Description of the Invention

[0029] The present invention provides tableted gums, such as tableted bubble gums, tableted chewing gums or the like. The tableted gum of the present invention includes a gum component in the form of gum chips and a tableting media. The gum chips are generally larger in size than the particles of the tableting media, such as those of a tableting powder. This can facilitate the ease in which the tableted gums are so produced as detailed below.

[0030] Further, the larger sized gum chips tend to concentrate in a top portion of the tableted gum such that the resultant tableted gum displays the non-homogeneous characteristics of the gum chip and tableting powder mixture. This can increase and enhance levels of enjoyment and excitement during its use. In this regard, a variety of differently colored gums can be easily produced by simply varying the color of the gum component and the tableting media. For example, the gum chips of the gum component can be a chocolate color and the tableting media a cookie-dough color, thus resulting in a gum that resembles a chocolate chip cookie. In another example, the gum chips can be orange in color and the tableting media can be white thus creating large blotches of color, such as orange, at a surface of the tableted gum.

[0031] In an embodiment, the tableted gum of the present invention includes a gum component and a tableting media. The gum component includes one or more gum chips. The gum chips of the gum component are generally larger in size than the

particles that compose or make-up the tableting media, such as powder-size particles of a tableting powder. In this regard, the gum chips generally have a smaller surface area than that of the particles of the tableting media.

[0032] As compared to typically known tableted gum formulations, the mixture of the gum component and tableting media of the present invention, when processed, necessarily results in less sticking or adhering of the mixture to the tableting process equipment. It is believed that this is due to the fact that the tableting mixture of the present invention contains a non-homogenous blend of tableting media and gum chips that have a larger average particle size than the average particle size of the tableting media. As compared to typical tableting mixtures which contain a homogeneously-sized mix of gum and tableting powder, the overall surface area of the tableting mixture of the present invention is smaller than that of known tableting mixtures due to the presence of the larger-sized gum chips. With a smaller surface area, less sticking of the mixture to the surface of the tableting process equipment would necessarily result upon processing the tableting mixture by punching, pressing or other like processes as detailed below.

[0033] It should be appreciated that the present invention is not limited by the size characteristics of the gum chips and the tableting media to the extent that the gum chips are larger in size than the particles of the tableting media, such as powder-sized particles of a tableting powder. In an embodiment, the average particle size of the gum chips ranges from about 0.5 millimeters (mm) to about 6.0 mm. The gum chip particles can be formed by any suitable process, preferably a chipping process, as detailed below. It should be appreciated that the particle size, unless indicated otherwise, is based on the maximum dimension of the particle. For example, the average particle size of gum chip particles which are rectangular in shape and have average dimensions of 3.2 mm x 3.2 mm x 1.4 mm is 3.2mm.

[0034]

The tableted gum of the present invention can include a variety of different amounts of the gum component and the tableting media. In an embodiment, the gum component includes about 40% to about 60% by weight of the tableted gum, and the tableting media includes about 40% to about 60% by weight of the tableted

gum. Preferably, the gum component includes about 40% by weight of the tableted gum, and the tableting media includes about 60% by weight of the tableted gum.

[0035] It should be appreciated that the tableted gum of the present invention can include a variety of other additional ingredients in addition to the gum component and the tableting media in order to facilitate processing of the tableted gum. In an embodiment, the tableted gum includes a food grade lubricant. The food grade lubricant can include any suitably known food grade lubricant, such as magnesium stearate, calcium stearate, stearic acid, carboxy methyl cellulose, like food grade lubricants or mixtures thereof.

[0036] In an embodiment, the lubricant preferably includes magnesium stearate in an amount that is 10% or less by weight of the tableting media, preferably a tableting powder. The lubricant can be added to the tableted gum in a variety of known ways. For example, it can be separately added to the mixture of the gum component and the tableting media. Further, the lubricant can be included within the tableting media, such as commercially available tableting powders.

[0037] The tableted gum of the present invention can be produced or manufactured in a variety of suitable ways. In an embodiment, the gum component can be mixed with a tableting media in any conventional and suitable way. This mixture can then be fed into a punch machine or the like, such as a commercially available tableting machine sold under the name "STOKES", to form the tableted gum.

[0038] For example, the mixture of gum chips and tableting media can be added to a stamping cavity or other like device. The mixture can then be punched or pressed under a suitable force or pressure to form a compacted mixture of the gum chips and tableting powder thus forming the tableted gum. As previously discussed, the amount of sticking of the tableted gum of the present invention to the tableting process equipment, such as the cavity, is less than what would necessarily occur when tableting typical mixtures of gum and tableting powder.

[0039] It has also been found that the difference in the particle size of the gum components and the tableting media results in a non-homogeneous distribution of

the gum component and tableting media within the tableting mixture. Upon placing the mixture into the process cavity, the larger sized particles of the gum component (i.e., the gum chips) tend to concentrate in a top region of the cavity. Upon compaction, the gum component or at least a substantial amount of the gum component remains in a top portion of the tableted gum. In an embodiment, the gum component is differently colored or has a different color than the tableting media. In this regard, the non-homogeneous color characteristic of the tableted gum can create and enhance enjoyment and excitement during use as previously discussed. In an embodiment, the gum component and tableting media have the same or similar color.

[0040] It should be appreciated that the tableted gum can include a variety of different and suitable components. In an embodiment, the tableted gum includes a gum component and a tableting media as previously discussed. It should be appreciated that the present invention can include a sugar or a sugar free tableted gum.

[0041] The tableting media includes a variety of available and known tableting medias. Preferably, the tableting media includes a tableting powder. Typical tableting powders can include sucrose-based powders, dextrose-based powders, polyol-based powders, such as sorbitol-based powders, like tableting powders or combinations thereof. It should be appreciated that the tableting powder can include a variety of additional ingredients, such as flavors, colors, sugar and/or sugarless sweeteners, additives, like ingredients or combinations thereof.

[0042] The gum component can include a variety of different components. It should be appreciated that the present invention can include any suitable gum provided that the gum can be processed into particles of requisite size. Preferably, the gum is a film forming type gum, generally referred to as bubble gum. Typically, bubble gum can be made from a standard formulation of bulk sweetener, gum base, corn syrup, softening agents, coloring agents, and flavoring agents. It should be appreciated that the gum component can be a sugar or a sugar free gum component. In an embodiment, the bubble gum is made from 60–80 percent bulk sweetener, 15–30 percent corn syrup, 1–5 percent softeners, 0.1–3 percent

flavoring agents and 0.01–1 percent coloring agents.

[0043] The gum component of the present invention can be produced by conventional techniques using standard equipment. In general, the gum component is manufactured by sequentially adding various gum ingredients to a commercially available mixer known in the art. After the ingredients have been thoroughly mixed, the gum mass is discharged from the mixer and shaped into the desired form such as by rolling into sheets. Generally, the ingredients are mixed by adding the gum base to the running mixer. The base may optionally be melted in the mixer. Color and emulsifiers may also be added at this time. A softener such as glycerine may also be added at this time along with syrup and a portion of bulking agent. Further portions of the bulking agent may then be added to the mixer. A flavoring agent is typically added with the final portion of the bulking agent. The entire mixing procedure typically takes from five to twenty-five minutes, but longer mixing times may sometimes be required. Those skilled in the art will recognize that many variations of the above described procedure may be followed.

[0044] As previously discussed, the present invention is not limited by the size of gum chips within the tableting mixture of gum and tableting media provided that the gum chips have an average particle size that is greater than the average particle size of the tableting media. In this regard, any suitable process, such as chopping, extrusion, slicing, scoring or the like, can be utilized to produce the gum chips provided that the gum chips are formed into gum particles of the requisite size.

[0045] In an embodiment, the gum chips are preferably formed by any known and suitable gum chipping process, such as by the process disclosed in U.S. Patent No. 5,318,784, the entire disclosure of which is herein incorporated by reference. In general, the gum chips can be formed by mixing gum ingredients in a conventional fashion, then sheeting, optionally scoring the gum and subsequently chipping the processed gum into chipped pieces. In an embodiment, the processed gum can be chilled or cooled at a suitable temperature prior to chipping the gum in order to facilitate such a process.

[0046] It should be understood that various changes and modifications to the

presently preferred embodiments described herein will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the present invention and without diminishing its intended advantages. It is therefore intended that all such changes and modifications be covered by the appended claims.

100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000